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It was prepared primarily to meet the requirements in mathematics for the second half of the first year at the Armour Institute of Technology. To make it adaptable to courses in other institutions of learning certain topics not usually taught in an engineering school have been added.

"While it is useless to claim any great originality in treatment or in the selection of subject matter, the methods and illustrations have been thoroughly tested in the class room. It is believed that the topics are so presented as to bring the ideas within the grasp of students found in classes where mathematics is a required subject. No attempt has been made to be novel only; but the best ideas and treatment have been used, no matter how often they have appeared in other works on the subject.

"The following points are to be especially noted:

(1) The great central idea is the passing from the geometric to the analytic and *vice versa.* This idea is held consistently throughout the book.

(2) In the beginning a broad foundation is laid in the algebraic treatment of geometric ideas. Here the student should acquire the analytic method if he is to make a success of the course.

(3) Transformation of coördinates is given early and used frequently throughout the book, not confined to a single chapter as is so frequently the case. The same may be said of polar coordinates.

(4) Fundamental concepts are dealt with in an informal as well as in a formal manner. The informal often fixes and clarifies the ideas where the formal does not.

(5) Numerous illustrative examples are worked out in order that the student may get a clear idea of the methods to be used in the solution of problems.

(6) The conic sections are treated from the starting point of the *focus* and *directrix* definition.

(7) Because of its great importance in engineering practice the empirical equation is dealt with more completely than is usual. This treatment has been made as elementary as possible, but sufficiently comprehensive to enable one to solve the average problem in empirical equations.

(8) The fundamental concepts of the calculus are presented in a very concrete manner, and a much greater use than is usual is made of the differential. The ideas are thus more readily visualized than is possible otherwise. The applications are mainly to tangents, normals, areas, and the discussion of equations.

(9) The concluding chapter gives an adequate and careful treatment of solid geometry so necessary in the study of the calculus.

(10) The exercises are numerous, carefully graded, and include many practical applications.

(11) In the introductory chapter are found various short tables and formulas, and at the end are given four-place tables of logarithms and trigonometric functions."

Contents—Chapter I: Introduction, 1–7; II: Geometric facts expressed analytically, and conversely, 8–43; III: Loci and equations, 44–58; IV: The straight line and the general equation of the first degree, 59–85; V: The circle and certain forms of the second degree equation, 86–97; VI: The parabola and certain forms of the second degree equation, 98–116; VII: The ellipse and certain forms of the second degree equation, 117–133; VIII: The hyperbola and certain forms of the second degree equation, 134–153; IX: Other loci and equations, 154–187; X: Empirical loci and equations, 188–205; XI: Poles, polars, and diameters, 206–215; XII: Elements of calculus, 216–260; XIII: Solid analytic geometry, 261–303; Summary of formulas, 303–306; Four-place table of logarithms, 308–309; Table of trigonometric functions, 310–314; Answers, 315–340; Index, 341–347.

Plane Trigonometry. By ARNOLD DRESDEN. New York, John Wiley & Sons, 1921. 8vo. 7 + 110 pages. Price $1.60.

From the Preface: "While the importance of the function concept for elementary mathematics has become recognized by many writers of college algebra texts and of 'unified freshman mathematics' books, it has received little recognition from writers on elementary trigonometry. To emphasize this importance has been the leading motive in writing the present book. A somewhat detailed study of the graphs of the trigonometric functions (Chapter V) and of the inverse functions (Chapter VIII) has been introduced for this purpose. Much more could and should be done in this direction; perhaps the present effort may suffice as a first step.

"The opportunity afforded by the writing of a new text has been used to make some changes in the presentation of the traditional material. Circular measurement of angles is introduced in the first chapter so as to be available for use throughout the course. The fundamental theorems on projections are presented early and are used subsequently so that the student may be familiar with them when they are applied in a general proof of the addition theorems, based on a method quite generally followed by continental writers. Recognizing the value of the 'solution of triangles,' a good deal of space has been devoted to this subject, and an attempt has been made to develop it in such a manner that the students can appreciate the reasons for the different methods that are discussed.

"On the question of 'applied problems,' I have taken a definite position. I do not think it feasible to introduce into an elementary text technical material from applied sciences, important though such material may be. Without such material, however, applications cannot well be anything but problems which use the language of the applied sciences without really belonging to them. An elementary text can render useful service, even to applied science, by stressing the fundamental concepts of trigonometry and by setting problems which connect with the student's actual experience and which suggest ways in which these concepts may be applied, leaving actual applications to the fields to which they belong.

"It has not seemed desirable to add to the number of tables of logarithms already available. The elementary treatment of logarithms in Chapter III and the problems scattered throughout the book call for the use of a set of five-place tables, of which there are many excellent ones in existence.

"No attempt at logical completeness has been made, but rather has it been my aim to adapt the treatment to the stage of logical development which may be expected of students who begin the study of trigonometry. I am aware of the fact that a fuller discussion might be made in several instances and I shall be happy if the treatment as given should arouse the critical powers of some students and develop in them a desire for more penetrating analysis.

"The material as here presented was used originally in mimeographed form by a few classes in the University of Wisconsin."

Contents—Chapter I: Positive and negative lines and angles. Coördinates. Radian measurement, 1–8; II: The trigonometric ratios. Simple identities, 9–19; III: Logarithms, 20–31; IV: Solution of right triangles. Applications, 32–40; V: The graphs of the trigonometric functions, 41–54; VI: The addition formulæ, 55–64; VII: The solution of triangles, 65–89; VIII: Inverse trigonometric functions. Trigonometric equations, 90–103; List of answers to the exercises, 105–108; Index, 109–110.

Elements of Map Projection with Applications to Map and Chart Construction. By C. H. Deetz and O. S. Adams. (Department of Commerce, U. S. Coast and Geodetic Survey, serial no. 146, special publication no. 68.) Washington, Government Printing Office, 1921. Royal 8vo. 163 pp. + 8 plates. Price $.50.

Preface: "In this publication it has been the aim of the authors to present in simple form some of the ideas that lie at the foundation of the subject of map projections. Many people, even people of education and culture, have rather hazy notions of what is meant by a map projection, to say nothing of the knowledge of the practical construction of such a projection.

"The two parts of the publication are intended to meet the needs of such people; the first part treats the theoretical side in a form that is as simple as the authors could make it; the second part attacks the subject of the practical construction of some of the most important projections, the aim of the authors being to give such detailed directions as are necessary to present the matter in a clear and simple manner.

"Some ideas and principles lying at the foundation of the subject, both theoretical and practical, are from the very nature of the case somewhat complicated, and it is a difficult matter to state them in a simple manner. The theory forms an important part of the differential geometry of surfaces, and it can only be fully appreciated by one familiar with the ideas of that branch of science. Fortunately, enough of the theory can be given in simple form to enable one to get a clear notion of what is meant by a map projection and enough directions for the construction can be given to aid one in the practical development of even the more complicated projections.

"It is hoped that this publication may meet the needs of people along both of the lines indicated above and that it may be found of some interest to those who may already have a thorough grasp of the subject as a whole."

Contents—*Part I:* General statement, 7–8; Analysis of the basic elements of map projection, 9–21; Representation of the sphere upon a plane, 22–29; Elementary discussion of various forms